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28990 Investigation of Environmental
Change Pattern in Japan

(Investigation of Variations in
the Prominent Oceanic Current, Kuroshio)

(E77-10081) INVESTIGATION OF ENVIRONMENTAL
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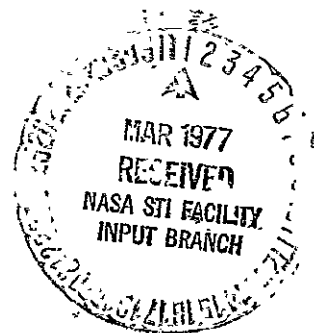
Co-Investigator
Chief Hydrographer

**ORIGINAL CONTAINS
COLOR ILLUSTRATIONS**

Original photography may be purchased from:
EROS Data Center
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Sioux Falls, SD 57198

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Investigation of Variations in the
Prominent Oceanic Current, Kuroshio

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1. Introduction

In succession to previous reports a method of color enhancement of MSS digital images is examined. Two color photographs taken from a color tube display show water change at the mouth of Tenryu river and the adjacent coastal area.

2. Techniques

Color image analysis system developed by NEC Research Institute is utilized by favor of the institute. The digital image data read into memories from CCT can be displayed on the color tube display giving the image processing of color enhancement.

3. Accomplishments

The river mouth of Tenryu examined in the previous report is selected as an experimental area. Two photographs Fig. 1 and Fig. 2 show the colored mappings taken out of pseudo-colors image of MSS band 4 and the composed

color image of band 4, 5 and 7, respectively.

In Fig. 1 digital counts of MSS band 4 are divided into ten classes, then different colors are assigned to each class. In Fig. 2 three-dimensional classification of digital counts of MSS band 4, 5 and 7 are determined, and ten different colors are assigned to those classes as shown in the Table. 1.

4. Significant results

From the comparison of Fig. 1 and Fig. 2 conspicuous results of the composed color image (Fig. 2) are realized in the ground patterns, such as the fine meander of the Tenryu river.

Generally speaking, however, no significant difference is found between single band color image and multi-band composed color image in the sea area. The reason for this can be considered that gain setting of MSS scene provided is rather more advantageous for land than for the sea. From the spectral property, only band 4 shows dominant feature in the sea. Skills of image enhancement and interpretation must be advanced.

5. Publications

No.

6. Problems

No.

7. Data quality and delivery

No.

8. Recommendations

Gain setting of MSS suitable for the sea is possibly desired.

9. Conclusions

No.

Table 1

color band		cyan	sepia	blue	violet	green	yellow	red	black	light- blue	white	
	U	L		L	L	L	L	L	L	L	L	U
7	26	00	off	01	01	01	01	01	01	02	08	31
5	57	00	-region	05	10	16	20	35	40	44	29	60
4	58	00		10	22	30	40	40	47	49	39	60
	water		land	w a t e r							shore line	

U: upper L: lower

The counts in each band are normalized into 64 levels between the highest and lowest values in this area. The numericals in the table shows the normalized level.

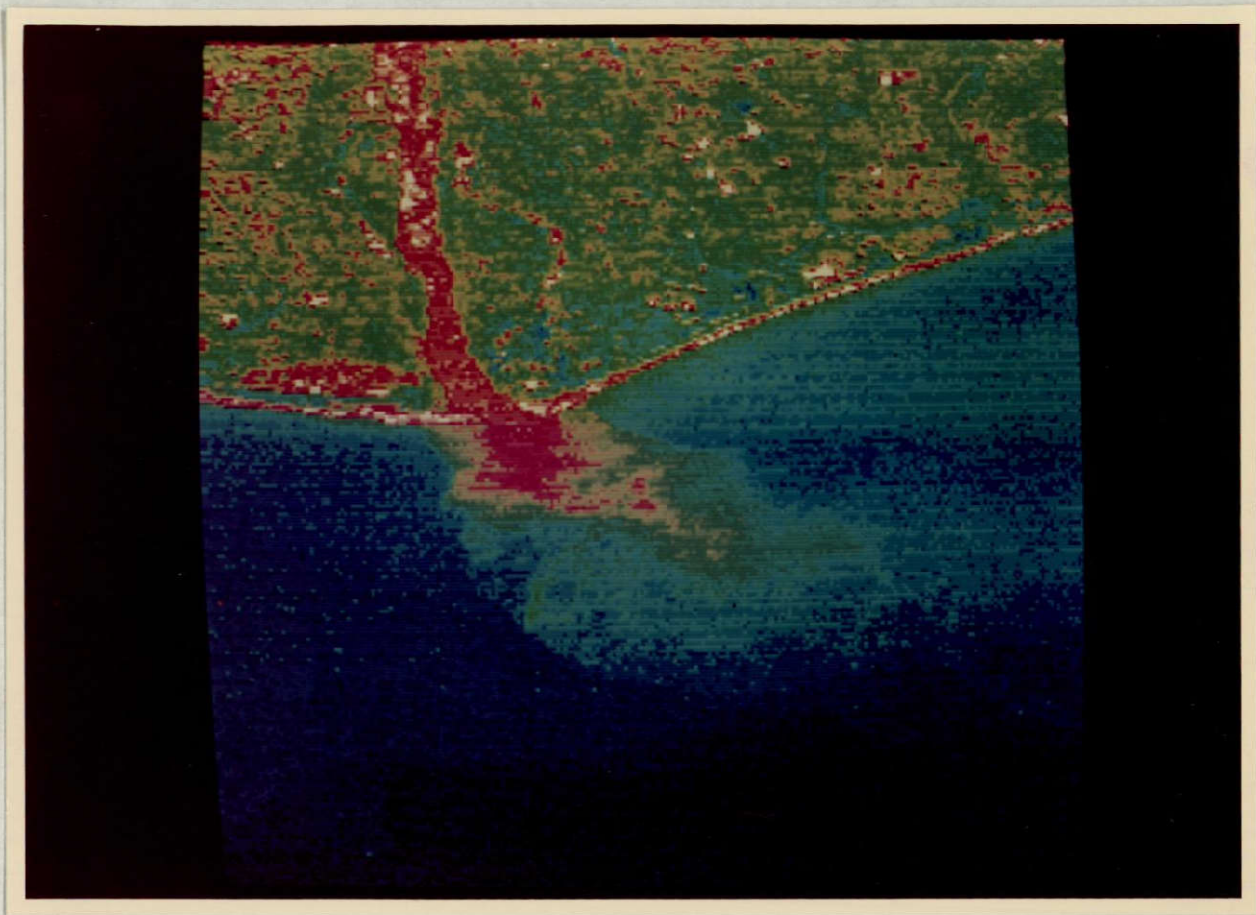


Fig. 1 Pseudo-colors image of MSS band 4

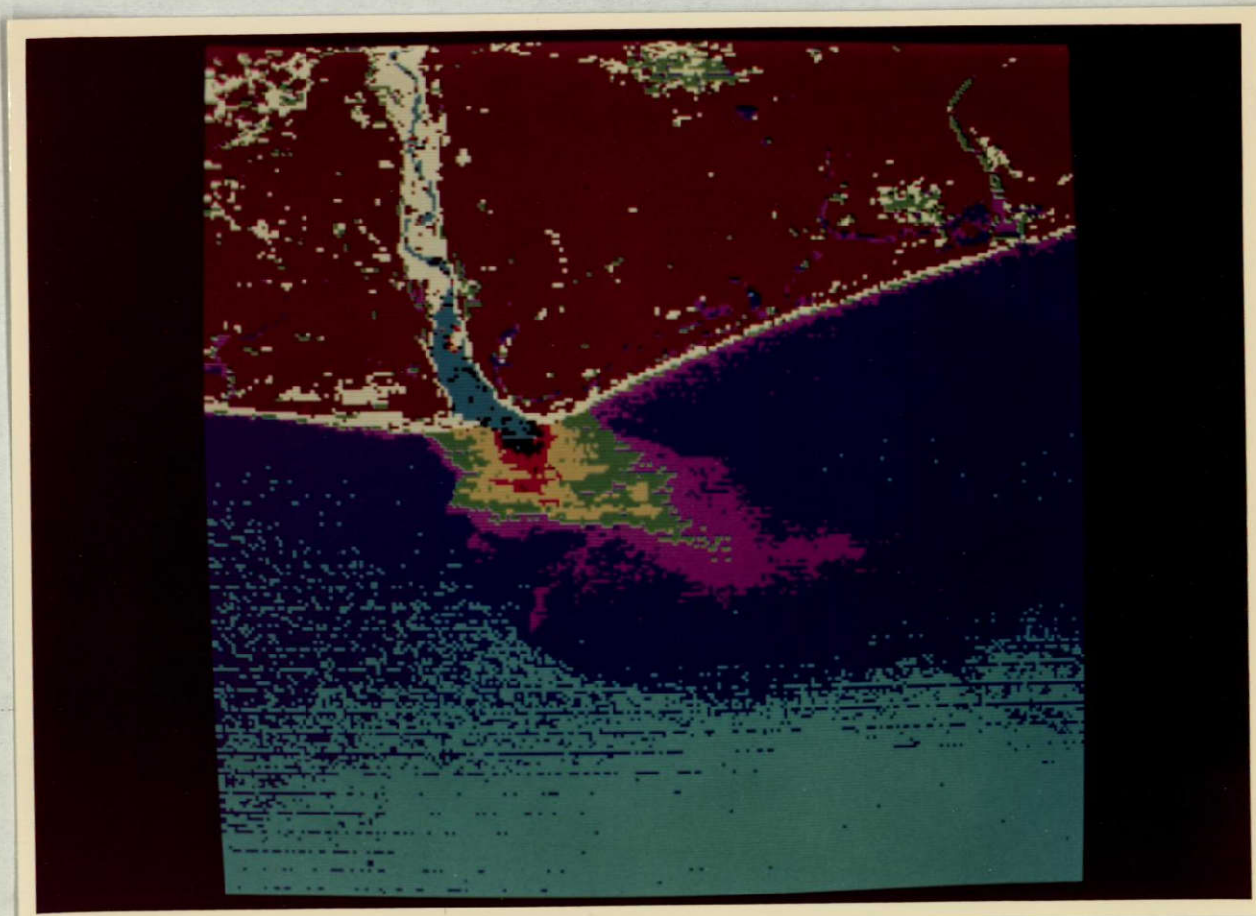


Fig. 2 Composed color image of MSS band 4, 5 and 7